

REMARKS

This is in response to the Official Action mailed October 14, 2008. In the present paper, claims 1, 8 and 20 are amended. Claims 3, 7, 9, 10 and 17-19 were canceled in previous papers. Claims 1, 2, 4-6, 8, 11-16 and 20 are presented for the Examiner's consideration.

Claim Rejections

In the outstanding Official Action, the Examiner has rejected claims 1, 2, 4-6 and 20 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Publication No. 2002/0073304 to Marsh et al. ("Marsh") in view of U.S. Patent Publication No. 2002/0073304 to Fletcher et al. ("Fletcher") and further in view of U.S. Patent No. 6,466,572 to Ethridge et al. ("Ethridge"), and has rejected claims 8 and 11-16 under 35 U.S.C. § 103(a) as unpatentable over Marsh in view of Fletcher, further in view of Ethridge and further in view of U.S. Patent No. 6,678,741 to Northcutt et al. ("Northcutt").

The Present Invention

The inventors have developed a technique and system for automated software distribution in a fiber optic network. The software is distributed to one or more host digital terminals (HDTs) in the network, and to one or more optical network units (ONUs) connected to each HDT. In the HDTs, the software resides on an optical multiplexing unit (OMU). In the ONUs, the software resides on an optical interface unit (OIU). The software residing on the various components is distinct, and performs distinct communications functions. One of the goals of the invention is to assure compatibility of the software residing in the OMUs with the software residing in the

OIUs. (present specification, page 2, line 22 - page 3, line 10; page 8, lines 9-12; page 13, lines 2-17).

An example of the method of the invention is claimed in amended method claim 8.

Claim 8 is directed to a method for automated distribution of software in a fiber optic network including at least one host digital terminal (HDT) that includes at least one optical multiplexing unit (OMU) and at least one optical interface unit (OIU), and including at least one optical network unit (ONU) that includes at least one further OIU. The method includes the steps of (a) identifying a version of first software installed on the OMU, the first software being for multiplexing signals from the at least one OIU of the HDT and for communicating with a switch; (b) identifying a version of second software installed in the further OIU connected to the OMU over a fiber optic connection, the second software being for multiplexing a plurality of subscriber connections and for communicating with an OIU of the HDT; and (c) determining whether there is at least a further ONU connected to the OMU over a fiber optic connection. If there is a further ONU connected to the OMU, then a version of software installed in at least one OIU included in the further ONU is identified, the version of software installed in the at least one OIU included in the further ONU being for multiplexing a plurality of subscriber connections and for communicating with an OIU of the HDT. If not, then the following steps are performed: determining if the second software is compatible with the first software; only if the first software is not compatible with the second software, then downloading an updated version of the first software to the OMU and updating the first software; and determining whether the fiber optic network includes at least a further OMU and, if so, repeating the method for the further OMU.

Claim Amendments

Each of the independent claims 1, 8 and 20 has been amended to clarify the invention claimed. Specifically, the particular software elements that are identified, downloaded and updated in the various method steps are further defined to make distinctions among them. Those distinctions include the following in one or more of independent claims 1, 8 and 20:

- The software residing on the OMU located in the HDT is further defined as “being for multiplexing signals from the at least one OIU of the HDT and for communicating with a switch.”
- The software residing on the one or more OIUs located in the HDT is further defined as “being for terminating signals from the at least one ONU and for communicating with the OMU.”
- The software residing on the OIU located in the ONU is further defined as “being for multiplexing a plurality of subscriber connections and for communicating with an OIU of the HDT.”

The specification as filed fully supports those amendments, for example, at page 8, line 13 - page 9, line 21 and at page 10, line 18 - page 11, line 16.

As claimed, the software residing in each of the components as described above therefore performs a particular and distinct function.

Each of the independent claims now requires that multiple distinct software elements are identified and downloaded. For example, independent claim 1 now requires first, second and third software, each distinctly defined, to be identified and downloaded. Applicants assert that none of the references identified by the Examiner teach identifying and downloading distinct multiple software elements.

Marsh deals with only a single distinct software. The Examiner has pointed to a passage of at paragraph [0045] as teaching “a plurality of networked computer systems” (Official Action of 10/14/08 at 2). The complete sentence quoted by the Examiner is reproduced here:

As a result, it is possible to configure the firmware patch 500 of the present invention to provide suitable feedback to a system administrator 610 that "pushes" the firmware upgrade to a plurality of networked computer systems 100b-100f to indicate the status of the firmware upgrade.

Marsh at [0045]. The Examiner has additionally noted that

... Marsh as the cited prior art is involved in upgrading a plurality of networked computer systems. Each system has a software installed, therefore the first system has a first software, the second system has a second software and the third system has a third software. The claim language does [not] make any further distinction.

(Official Action at 7).

Applicants assert that the amendments to the independent claims fully address the Examiner's concerns regarding distinctions among the software elements in the claims. Each software element is claimed to perform a particular function. Marsh does not deal with multiple software elements, and therefore does not teach the identification and downloading steps of the independent claims.

Northcutt deals with updating firmware in a client to define a protocol compatible with that used by a server (Northcutt, col. 1, lines 26-31; col. 4, line 63 - col. 5, line 4). Northcutt does not teach any particular function of the firmware beyond defining a common protocol, and to that end, the firmware in the various devices is not distinct.

Fletcher teaches a method and apparatus for automatically updating software components in one or more end systems in a network. The software is installed and the components updated without rebooting system software. Fletcher does not define or distinguish the software components that are updated.

Ethridge describes a multiplexing technique for fiber optic cable. Ethridge does not discuss the identification or updating of software, and does not describe distinct software element used in an optical network.

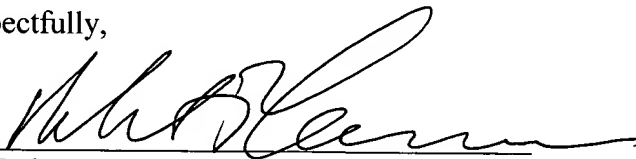
Applicants therefore assert that independent claims 1, 8 and 20, together with those claims depending from those claims, are patentable over the cited combination for that reason.

Conclusion

Applicants therefore respectfully assert that claims 1, 2, 4-6, 8, 11-16 and 20 are in condition for allowance, and earnestly request that the Examiner issue a Notice of Allowance.

Should the Examiner have any questions regarding the present case, the Examiner should not hesitate in contacting the undersigned at the number provided below.

Respectfully,

By 

Robert T. Canavan

Reg. No. 37,592

Telephone: 908-707-1568

Law Office of Robert T. Canavan
62 Grove Street, Suite B
Somerville, NJ 08876

Date: MARCH 10, 2009